Sub B1

1. (Amended) A method for dithering color in a graphics system that displays a group of pixels and wherein the color of the pixels is represented by color shades having fewer than eight bits, comprising the steps of:

(a) generating an eight bit color shade value for each pixel representing a desired color for each pixel;

(b) truncating the desired eight bit color shade value to obtain a truncated color shade value;

(c) generating a FRAC value for each pixel from the truncated bits of said eight bit color shade value;

(d) producing a ramp value for each pixel using said FRAC value, wherein said ramp value encodes a discrepancy between the desired eight bit color shade value and the truncated color shade value; and

(e) using a single bit from said ramp value to select a color shade value of fewer than eight bits that determines the color of each pixel.

Sub B2

6. (Amended) A method for dithering pixel color in a graphics system that displays a group of pixels in which primary pixel colors are represented by color shades having fewer than eight bits comprising the steps of:

(a) generating an eight bit color shade value for each pixel representing a desired color for each pixel;

(b) truncating the desired eight bit color shade value to produce a first color shade value comprising fewer than eight bits;

(c) generating a FRAC value for each pixel representing the truncated bits of said desired eight bit color shade value;

(d) producing a ramp value for each pixel using said FRAC value, wherein said ramp value encodes a discrepancy between the desired eight bit color shade value and the first color shade value;

(e) producing an addend value for incrementing said first color shade value[,];

(f) incrementing said first color shade value by said addend value to produce a second color shade value; [and]

(g) mapping a dither value to a bit position within said ramp value; and

(h) selecting said first color shade value or said second color shade value to determine the color of each pixel in said group of pixels.

12. (Amended) A graphics system that displays color shades based upon binary representation having fewer than eight bits, wherein said graphics system initially receives a desired eight bit binary representation for each color shade that is used by the graphics system to render pixels in a pixel grid, said desired eight bit binary representation including upper order bits and lower order bits, comprising:

select fractional logic that receives the desired eight bit binary representation and wherein said select fractional logic produces on its output lines the lower order bits of said desired eight bit binary representation value;

a look-up table that produces a control value based upon an address of each pixel; and

ramp probability logic coupled to said select fractional logic and said look-up table, said ramp probability logic producing a ramp value that encodes a discrepancy between said desired eight bit binary representation and said binary representations having fewer than eight bits.

22. (Amended) A computer readable storage medium for storing an executable set of software instructions which, when inserted into a host computer system, is capable of controlling the operation of the host computer, said software instructions being operable to dither pixel colors in a graphics system and wherein the color of the pixels is represented by color values having fewer than eight bits, said software instructions including:

means for determining a first index value to a look-up table;

means for providing a look-up table value from said look-up table based on said first index value;

means for determining a ramp probability value; [and]

means for mapping said look-up table value to a bit position within said ramp probability value; and

means for [using said ramp probability value and said look-up table value to determine] selecting a dither color value in said graphics system.

36. (Amended) A method for dithering color in a graphics system that displays a group of pixels on a screen, wherein the color of the pixels is represented by color values having fewer than eight bits, said method comprising:

determining a first index value to a look-up table;

determining a look-up table value from said look-up table based on said first index value;

determining a ramp probability value that encodes a discrepancy between an eight-bit color value and a color value having fewer than eight bits; [and]

mapping said look-up table value to a bit position within the ramp probability value; and

using [said ramp probability value and said look-up table value to] a value stored in said bit position determine a dither color value in said graphics system.